

Message

From: Brasaemle, Karla [Karla.Brasaemle@TechLawInc.com]
Sent: 9/20/2018 10:16:21 PM
To: d'Almeida, Carolyn K. [dAlmeida.Carolyn@epa.gov]
CC: Nicole Goers [Nicole.Goers@TechLawInc.com]; Davis, Eva [Davis.Eva@epa.gov]; Dan Pope [DPope@css-inc.com]; Wayne Miller [Miller.Wayne@azdeq.gov]; Jennings, Eleanor [Eleanor.Jennings@parsons.com]; Paula Panzino [Panzino.Paula@azdeq.gov]
Subject: RE: 2018-9-20 - wafb - FYI - ejennings DRAFT comments -microbial insights data rpt - ST012-ej parsons
Attachments: SMART-Remediation-Toronto-2017-Sandra-Dworatzek.pdf; Tackling Benzene Contamination with Ana...pdf

Yes, it appears that SiREM has developed a benzene bioremediation culture in cooperation with a Canadian university. It's pretty new, but may be in commercial projection by now. It's after hours back east, so I cannot contact them today to check. Here is a powerpoint and a pdf of a webpage about benzene bioaugmentation cultures.

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Sent: Thursday, September 20, 2018 3:07 PM
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Does MI or other vendor sell such amendments? Would bench scale tests be advisable first?

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"Because a waste is a terrible thing to mind..."

From: Brasaemle, Karla [mailto:Karla.Brasaemle@TechLawInc.com]
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Cc: Nicole Goers <Nicole.Goers@TechLawInc.com>
Subject: RE: 2018-9-20 - wafb - FYI - ejennings DRAFT comments -microbial insights data rpt - ST012-ej parsons

Hi Carolyn,

This is not good news. The AF contractor should be acquiring a suitable bio-augmentation culture that would degrade benzene and other petroleum products. Without injecting a suitable culture, sulfate should not be injected.

Karla Brasaemle, P.G.,
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From: d'Almeida, Carolyn K. <dAlmeida.Carolyn@epa.gov>
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Subject: FW: 2018-9-20 - wafb - FYI - ejennings DRAFT comments -microbial insights data rpt - ST012-ej parsons

FYI

Eleanor's analysis of the microbial insights data attached. See conclusion on page 10:

5 SUMMARY

Frozen microbial community DNA, initially obtained for a narrow-spectrum genetic profile of six Site samples, was used for a more broad Quant-Array (Petroleum) genetic analysis. The key results of this available data reveal:

- No samples revealed detectable levels of anaerobic benzene-specific biodegradation.
- Although aerobic biodegradation of aromatic hydrocarbons was detected in two of the six samples, it cannot be confirmed that these results are from benzene-specific bioattenuation or if the results reflect the degradation of other, non-benzene, aromatic hydrocarbons.
- The presence of an indigenous, benzene-specific biodegrading microbial population has not yet been confirmed for this Site.
- Benzene biodegradation under sulfate-reducing conditions is not occurring at this Site.

This data should be strongly considered when future Site MNA or EBR plans are being employed.

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"Because a waste is a terrible thing to mind..."

From: Wayne Miller [mailto:Miller.Wayne@azdeq.gov]
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Subject: 2018-9-20 - wafb - FYI - ejennings DRAFT comments -microbial insights data rpt - ST012-ej parsons

For initial EPA-ADEQ discussion points, attached are Eleanor Jennings initial draft comments.

Wayne Miller

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